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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRAN, LONG K

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 02/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/801,339

Applicant(s)

CHEN ET AL.

Examiner

Long K. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-22 in Paper No. 6 is acknowledged.

Claims 23-27 have been canceled.

Claims 1-22 are presented for examination.

### ***Information Disclosure Statement***

2. This office acknowledges receipt of the following items from the Applicant:

Information Disclosure Statement (IDS) filed on March 7, 2001.

Information disclosed and list on PTO 1449 was considered.

### ***Specification***

- 3 Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1- 5 and 10-11** are rejected under 35 U.S.C. 102(b) as being anticipated by Sahakian (U.S. Patent 4,907,065).

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Regarding **claim 1**, Sahakian discloses a device comprising: a base (fig.1, 10); a device (fig.1, 11) connected to the base; and a cover (fig. 4, 25) including a plastic body (col. 1, lines 20-23) and at least one electrically conductive lead (fig. 4, 16), wherein the body is connected to the base such that the device is enclosed by the cover, and wherein the electrically conductive lead includes an exposed portion (fig. 4, 22) electrically connected to the device.

Regarding **claim 2**, Sahakian discloses an inner surface (fig. 4, 31) of the body of the cover and an upper surface of the device define an air gap (col. 3, lines 66-67).

Regarding **claim 3**, Sahakian discloses the inner surface of the body of the cover includes a sidewall (fig. 4, 26) connected to the base.

Regarding **claim 4**, Sahakian discloses the base includes a circuit board as an electrically conductive base-plate on which the device is mounted (col. 4, lines 5-7).

Regarding **claim 5**, Sahakian discloses the base includes a substrate (fig. 1 & fig. 4, 10) on which the device is fabricated.

Regarding **claims 10 and 11**, Sahakian discloses the IC active chip area (fig. 4, 20) for IC chip made of semiconductor material (col. 4, line 54).

### ***Claim Rejections - 35 USC § 103***

6 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 7,9 and 12-13**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahakian (U.S. Patent No. 4,907,065).

Regarding **claim 7**, Sahakian discloses the claimed invention except for the base includes a dielectric material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the base including a dielectric material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding **claim 9**, Sahakian discloses the claimed invention except for the body of the cover includes liquid crystal polymer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the body of the cover including liquid crystal polymer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding **claims 12-13**, Sahakian discloses the claimed invention except for the device is selected from the group consisting of a MMIC; and the group consisting of a MEMS device, an optoelectronic device, a crystal device, an acoustic wave device, and a capacitor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a device selected from the group consisting of a MMIC;

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and the group consisting of a MEMS device, an optoelectronic device, a crystal device, an acoustic wave device, and a capacitor, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

*Nerwin V. Erlichman, 168 USPG 177, 179.*

**8. Claims 6, 8, 14 -22** rejected under 35 U.S.C. 103(a) as being unpatentable over Sahakian (U.S. Patent No. 4,907,065) in view of Tanaka et al. (U.S. Patent No. 5,097,318).

Regarding **claim 6**, Sahakian discloses the claimed invention except for at least one electrically conductive via extending from a first surface of the substrate to a second surface of the substrate; and at least one electrically conductive ball connected to the electrically conductive via.

Tanaka et al. disclose solder bump (fig. 8, 11) connected to the conductor through-holes (fig. 8, 4) in order to change the wiring pattern design without changing the insulating base substrate and the insulating cover substrate.

Regarding **claim 8**, Sahakian discloses the claimed invention except for an electrically conductive bump between the exposed portion of the lead and the device.

Tanaka et al. disclose solder bump (fig. 8, 11) connected to the other side of terminal pin (fig. 8, 5) in order to connect the device and the wiring layers when the connection cannot be carried out by the wire bonding technique.

Regarding **claim 14**, Sahakian discloses a device comprising: a base (fig.1, 10); a device (fig.1, 11) connected to the base; and a cover (fig. 4, 25) including a plastic

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body (col. 1, lines 20-23) and at least one electrically conductive lead (fig. 4, 16), wherein the body is connected to the base such that the device is enclosed by the cover such that an inner surface (fig. 4, 31) of the body of the cover and an upper surface of the device define an air gap there between (col. 3, lines 66-67) except for the electrically conductive lead includes an exposed portion except for the electrically conductive bump electrically connected between the device and the exposed portion of the electrically conductive lead.

Tanaka et al. disclose solder bump (fig. 8, 11) connected to the other side of terminal pin (fig. 8, 5) in order to connect the device and the wiring layers when the connection cannot be carried out by the wire bonding technique.

Regarding **claim 15**, Sahakian discloses a device comprising: circuit board as an an electrically conductive base-plate (col. 4, lines 5-7); a device (fig. 1, 11) connected to the base; and a cover (fig. 4, 25) including a plastic body (col. 1, lines 20-23) and at least one electrically conductive lead (fig. 4, 16), wherein the body is connected to the base such that the device is enclosed by the cover such that an inner surface (fig. 4, 31) of the body of the cover and an upper surface of the device define an air gap there between (col. 3, lines 66-67) except for the electrically conductive lead includes an exposed portion except for the electrically conductive bump electrically connected between the device and the exposed portion of the electrically conductive lead.

Tanaka et al. disclose solder bump (fig. 8, 11) connected to the other side of terminal pin (fig. 8, 5) in order to connect the device and the wiring layers when the connection cannot be carried out by the wire bonding technique.

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Regarding **claims 16 and 17**, Sahakian and Tanaka et al. disclose the IC active chip area (fig. 4, 20) for IC chip made of semiconductor material (col. 4, line 54).

Regarding **claim 18**, Sahakian and Tanaka et al. disclose the claimed invention except for the semiconductor device is selected from the group consisting of a MMIC.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to the device is selected from the group consisting of a MMIC, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin V. Erlichman*, 168 USPQ 177, 179

Regarding **claims 19 and 20**, Sahakian and Tanaka et al. disclose the claimed invention except for the device includes a GaAs substrate; and the base-plate includes a metal selected from the group consisting of CuW and Cu/Mo/Cu; and the body of the cover includes liquid crystal polymer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to the device includes a GaAs substrate; and the base-plate includes a metal selected from the group consisting of CuW and Cu/Mo/Cu; and the body of the cover includes liquid crystal polymer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding **claim 21**, Sahakian and Tanaka et al. disclose an inner surface (fig. 4, 31) of the body of the cover and an upper surface of the device define an air gap (col. 3, lines 66-67).



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Regarding **claim 22**, Sahakian and Tanaka et al. disclose the inner surface of the body of the cover includes a sidewall (fig. 4, 26) connected to the base-plate.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 703-305-5482. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 703-308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3329.

Long Tran *UKT*

February 8, 2002

  
David Nelms  
Supervisory Patent Examiner  
Technology Center 2800